

We claim:-

1. A process for the preparation of polyurethane foams having a
5 density of less than 200 g/l, by reacting
 - a) polyisocyanates with
 - b) compounds having at least two hydrogen atoms reactive
10 with isocyanate groups,

wherein the polyisocyanates a) are aromatic di- or
polyisocyanates and the compounds b) having at least two
hydrogen atoms reactive with isocyanate groups contain at
15 least one acrylate polyol having a hydroxyl number between 15
and 500 mg KOH/g, which can be prepared by copolymerization
of hydroxyl-functionalized (meth)acrylates with ethene,
propene, butene, isobutene, diisobutene, acrylonitrile,
acrylamide, acrolein, styrene, methylstyrene, divinylbenzene,
20 maleic anhydride, vinyl esters of carboxylic acids or
unsaturated carboxylic acids, for example maleic acid,
fumaric acid or crotonic acid or derivatives thereof, and at
least one polyether alcohol or polyester alcohol.
- 25 2. A process as claimed in claim 1, wherein the acrylate polyols
have an average molecular weight M_n of not more than
12 000 g/mol.
3. A process as claimed in claim 1, wherein the acrylate polyols
30 have an average molecular weight M_n of not more than
8000 g/mol.
4. A process as claimed in claim 1, wherein the acrylate polyols
35 have an average molecular weight M_n of not more than
6000 g/mol.
5. A process as claimed in claim 1, wherein the acrylate polyols
are prepared by polymerization of hydroxyl-functionalized
(meth)acrylates.
- 40 6. A process as claimed in claim 1, wherein the acrylate polyols
are prepared by copolymerization of hydroxyl-functionalized
(meth)acrylates with monomers containing olefinic double
bonds and no hydroxyl functional groups.
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7. A process as claimed in claim 1, wherein the acrylate polyols are prepared by copolymerization of hydroxyl-functionalized (meth)acrylates with (meth)acrylates having no hydroxyl functional groups.
- 5 8. A process as claimed in claim 1, wherein the acrylate polyols are prepared by polymerization of C₁- to C₈-hydroxyalkyl (meth)acrylates.
- 10 9. A process as claimed in claim 1, wherein the acrylate polyols are prepared by copolymerization of C₁- to C₈-hydroxyalkyl (meth)acrylates with alkyl (meth)acrylates having C₁- to C₁₀-alkyl groups.
- 15 10. A process as claimed in claim 1, wherein acrylate polyols are used in an amount of from 0.1 to 50 parts by weight, based on 100 parts by weight of the compounds b) having at least two hydrogen atoms reactive with isocyanate groups.
- 20 11. A process as claimed in claim 1, wherein acrylate polyols are used in an amount of from 0.5 to 40 parts by weight, based on 100 parts by weight of the compounds b) having at least two hydrogen atoms reactive with isocyanate groups.
- 25 12. A process as claimed in claim 1, wherein the acrylate polyols are used in an amount of from 1 to 30 parts by weight, based on 100 parts by weight of the compounds b) having at least two hydrogen atoms reactive with isocyanate groups.
- 30 13. A process as claimed in claim 1, wherein the polyisocyanates a) used are tolylene diisocyanate, diphenylmethane diisocyanate, polyphenylpolymethylene polyisocyanate, phenylene diisocyanate, xylylene diisocyanate, naphthylene diisocyanate, tolidine diisocyanate or a mixture of said isocyanates.
- 35 14. A process as claimed in claim 1, wherein the polyisocyanates a) were modified by incorporation of urethane, allophanate, urea, biuret, uretdione, amide, isocyanurate, carbodiimide, uretonimine, oxadiazinetriene or iminooxadiazinedione structures.
- 40 15. A process as claimed in claim 1, wherein the polyisocyanates a) were modified by incorporation of urethane, allophanate, uretdione, carbodiimide, uretonimine, biuret or isocyanurate structures.
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16. A polyurethane foam which can be prepared as claimed in any of claims 1 to 15.

5 17. A polyol blend for the preparation of polyurethane foams, comprising at least one acrylate polyol and at least one polyetheralcohol or polyesteralcohol.

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Preparation of polyurethane foams

Abstract

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Polyurethane foams having a density of less than 200 g/l are prepared by reacting

a) polyisocyanates with

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b) compounds having at least two hydrogen atoms reactive with isocyanate groups,

the polyisocyanates a) being aromatic di- or polyisocyanates and
15 the compounds b) having at least two hydrogen atoms reactive with isocyanate groups containing at least one acrylate polyol.

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